

Evidence insufficient to make recommendation regarding screening for lipid disorders in children

August 9 2016

The U.S. Preventive Services Task Force (USPSTF) has concluded that the current evidence is insufficient to assess the balance of benefits and harms of screening for lipid disorders in children and adolescents 20 years or younger. The report appears in the August 9 issue of *JAMA*.

This is an I statement, indicating that the evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Elevations in levels of total, low-density lipoprotein (LDL), and non-high-density lipoprotein cholesterol (non-HDL-C); lower levels of high-density lipoprotein cholesterol; and, to a lesser extent, elevated triglyceride levels are associated with risk of cardiovascular disease in adults. Recent estimates from the National Health and Nutrition Examination Survey (NHANES) indicate that 7.8 percent of children age 8 to 17 years have elevated levels of total cholesterol (TC) and 7.4 percent of adolescents age 12 to 19 years have elevated LDL-C. The rationale for screening for lipid disorders in children and adolescents is that early identification and treatment of elevated levels of LDL-C could delay the atherosclerotic process and thereby reduce the incidence of premature ischemic cardiovascular events in adults.

To update its 2007 recommendation, the USPSTF reviewed the evidence on screening for lipid disorders in children and adolescents 20 years or

younger—1 review focused on screening for heterozygous familial hypercholesterolemia (a disorder caused primarily by mutations in the LDL receptor gene that causes severe elevations in levels of LDL-C, resulting in early atherosclerotic lesions), and 1 review focused on screening for multifactorial dyslipidemia (defined by elevated levels of LDL-C or TC that are not attributable to familial hypercholesterolemia).

The USPSTF is an independent, volunteer panel of experts that makes recommendations about the effectiveness of specific preventive care services such as screenings, counseling services, and preventive medications.

Detection

The USPSTF found inadequate evidence on the quantitative difference in diagnostic yield between universal and selective screening for familial hypercholesterolemia or multifactorial dyslipidemia.

Benefits of Early Detection and Treatment

The USPSTF found inadequate direct evidence on the benefits of screening for familial hypercholesterolemia or multifactorial dyslipidemia.

- **Familial Hypercholesterolemia:** The USPSTF found adequate evidence from short-term trials (2 years or less) that pharmacotherapy interventions result in substantial reductions in levels of LDL-C and TC in children with familial hypercholesterolemia. The USPSTF found inadequate evidence to address whether treatment with short-term pharmacotherapy leads directly to a reduced incidence of premature cardiovascular disease (e.g., heart attack or stroke). The USPSTF found

inadequate evidence on the association between changes in intermediate lipid outcomes or noninvasive measures of atherosclerosis in children and adolescents and incidence of or mortality from relevant adult health outcomes.

- **Multifactorial Dyslipidemia:** The USPSTF found inadequate evidence on the benefits of lifestyle modification or pharmacotherapy interventions in children and adolescents with multifactorial dyslipidemia to improve intermediate lipid outcomes or atherosclerosis markers or to reduce incidence of premature cardiovascular disease.

Harms of Early Detection and Treatment

The USPSTF found inadequate evidence to assess the harms of screening for familial hypercholesterolemia or multifactorial dyslipidemia. The USPSTF found inadequate evidence to assess the long-term harms of treatment of familial hypercholesterolemia in children or adolescents. Long-term evidence on the treatment of familial hypercholesterolemia was limited to 1 study of statins. Short-term statin use was generally well tolerated in children and adolescents with familial hypercholesterolemia, with transient adverse effects (such as elevated liver enzyme levels). The USPSTF also found inadequate evidence to assess the harms of treatment of multifactorial dyslipidemia in children or [adolescents](#).

More information: *JAMA* (2016). [DOI: 10.1001/jama.2016.9852](https://doi.org/10.1001/jama.2016.9852)

Provided by The JAMA Network Journals

Citation: Evidence insufficient to make recommendation regarding screening for lipid disorders in children (2016, August 9) retrieved 25 April 2024 from

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